

2017 Abstract: Water Recovery System Architecture and Operational Concepts to Accommodate Dormancy

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Future manned missions beyond low Earth orbit will include intermittent periods of extended dormancy. The mission requirement includes the capability for life support systems to support crew activity, followed by a dormant period of up to one year, and subsequently for the life support systems to come back online for additional crewed missions. NASA personnel are evaluating the architecture and operational concepts that will allow the Water Recovery System (WRS) to support such a mission. Dormancy could be a critical issue due to concerns with microbial growth or chemical degradation that might prevent water systems from operating properly when the crewed mission began. As such, it is critical that the water systems be designed to accommodate this dormant period. This paper identifies dormancy issues, concepts for updating the WRS architecture and operational concepts that will enable the WRS to support the dormancy requirement.